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## ARRA Advanced Weatherization Training Center - Quarterly Report (January 2011-March 2011)

Florida Solar Energy Center

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*Florida Solar Energy Center*



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FLORIDA SOLAR ENERGY CENTER®

*Creating Energy Independence*

# ARRA Advanced Weatherization Training Center

Quarterly Progress Report

January 2011 - March 2011

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A Research Institute of the University of Central Florida

## Abstract

The 1st quarter of 2011 was the beginning of procurement for the training center. Two pieces of equipment, the insulation blowing machine and infrared cameras, were put out for quotes. Both have been selected and purchase orders created.

## Introduction

Under this grant, FSEC will expand the scope and curriculum of the current training center in order to more fully educate the weatherization professional. The modules are to be enhanced to demonstrate advanced air sealing techniques, demonstrate insulation problems, and offer training to contractors who would provide energy retrofits for weatherization and other homes. New curriculum materials will in large part adopt DOE standardized weatherization training curricula, but will also integrate Florida-specific weatherization protocols. More advanced training classes will be created, targeted towards both the auditor/inspector and the contractor. These new classes will cover:

- house envelope air sealing concepts and approaches,
- duct diagnosis and repair,
- resolving unbalanced return air problems,
- solving wind washing problems,
- the use of infrared thermography to diagnose thermal and air leakage failures in buildings, and
- combustion safety.

Additional training models will be constructed that will enrich learning, allowing increased hands-on testing and measurements. Additional field-testing equipment will be purchased to enhance the learning experience. Part of a class module will be used to discuss the audit/retrofit/inspect process such that the student can maximize efficiency without missing key energy wasters. The training will apply the DOE criteria with extra emphasis applied to those factors that contribute to significant energy use in the southeastern United States. In order to maximize the value of the training, part of the new modules will describe how to apply the weatherization techniques to other energy retrofit opportunities.

FSEC will also modify the 5-day weatherization-training program, which is currently used by the State of Florida to train all 29 weatherization agency audit personnel. The current training curriculum aligns with the Core Competencies for the Weatherization Assistance Program (March 26, 2007) for Auditors. The first day (orientation to the Weatherization Assistance Program and Safe Work Practices) will be converted to a web-based offering, freeing up a day for more in-depth instructor-interactive training.

## Activities - Timeframe

There are three general categories that are to be developed and put in place by the end of the contract. These are included in the project management plan that was submitted to U.S. Department of Energy Weatherization Assistance Program.

### 1-Develop and modify new curricula

#### ***a. Project Management and Planning (10/1/10 - 3/31/12}***

Project Management Plan will be updated from time to time as the project progresses. Events which could trigger alteration of the PMP could include increases in numbers of attendees, changes to the WAP rules and guidelines, and introduction of new programs to which the training needs to adapt, such as RESNET. Additionally, modifications to the PMP will be used to report schedule and budget variances.

#### ***b. Draft new course curricula (1/3/11 - 3/30/11)***

New training modules will be created to cover advanced house envelope air tightening concepts and approaches, duct diagnosis and repair, and the use of infrared thermography to

diagnose thermal and air leakage failures in buildings, and combustion safety. New lab exercises will be created to instruct on diagnostic skills and to illustrate repair techniques.

**c. *Finalize curricula after initial offering (2/28/11 - 9/30/11)***

Upon completion of new training modules, the new lecture and lab modules will be offered. Upon completion of the initial offering, adjustments will be made to improve the content or delivery effectiveness.

**d. *Review criteria for any changes in laws, programs, or student feedback (7/1/11 - 11/30/11)***

Approximately nine months after the first offerings of the updated materials, follow-up with class attendees will be conducted to obtain feedback on how the training has worked in the field

## 2-Deliver training

**a. *Initial offering of advanced training (3/1/11 - 12/23/11)***

Upon completion of the expanded and advanced training modules, an initial offering will be provided.

**b. *Offer full expanded WAP training (5/1/11 - 6/30/12)***

After making initial adjustments to the newly developed lecture and lab materials, the new full-scope weatherization training will be provided.

**c. *Develop and offer on-line training course (3/1/11 - 6/30/11)***

The Orientation to the Weatherization Assistance Program one-day training will be converted into an on-line training course, and then offered starting in the first quarter of 2011.

**d. *Continue to offer full WAP training (7/1/11 - 3/30/12)***

The fully expanded WAP training will continue to be offered from the fourth quarter of 2010 through the first quarter of 2012.

**e. *Follow-up with first students trained (5/1/11 - 3/30/12)***

Solicit feedback from attendees of the first full and expanded WAP training to determine the effectiveness of training to their field experience, and determine how the training could be altered to effect improvements.

## 3-Upgrade the training models and equipment

**a. *Order new equipment (3/1/11 - 3/31/11)***

Equipment used in training of diagnostic methods will be purchased to enhance the quality of the learning experience for attendees. A list of proposed equipment is included in the Equipment Appendix.

**b. *Modify training center modules (3/1/11 - 9/30/11)***

Existing lab modules will be upgraded. New modules will be created to illustrate advanced air tightening and thermal boundary retrofit methods. Current lab modules are complex, walk-in sized units. It is anticipated, more classes can be offered. If the program demand is less than anticipated, instructors can be moved to other projects. Thus FSEC is well prepared to scale the educational opportunities forward or that new modules will be designed to a similar scale.

**c. *Develop and implement marketing plan (3/1/11 - 3/30/12)***

A marketing plan will be developed and implemented, which will include identifying target audiences and producing and distributing electronic and printed brochures

## Task Status

### 1-Develop and modify new curricula

- a. *Project Management and Planning* - completed
- b. *Draft new course curricula* - Started concept development - combustion appliance testing that will meet the RESNET Combustion Safety Testing protocols as well.
- c. *Finalize curricula after initial offering* - Not started
- d. *Review criteria for any changes in laws, programs, or student feedback* - Not started

### 2-Develop and modify new curricula

- a. *Initial offering of advanced training* - Not started
- b. *Offer full-expanded WAP training* - The next Florida Weatherization Inspector training is tentatively being offered on May 16<sup>th</sup> - May 20<sup>th</sup>, 2011. It is planned that some of the new training materials will be introduced at that time.
- c. *Develop and offer on-line training course* - Not started
- d. *Continue to offer full WAP training* - Not started
- e. *Follow-up with first students trained* - Not started

### 3-Upgrade the training models and equipment

- a. *Order new equipment* - The purchase of an insulation-blowing machine has been completed and delivered to the training center. The purchase of ten (10) infrared cameras is in process. A purchase order has been secured and awaiting delivery of the infrared cameras. This completes this section.
- b. *Modify training center modules* - One of the first prototype modules is nearly completed. Its primary function will be that of more complex combustion appliance zone testing and determination of air barriers within the building envelope.
- c. *Develop and implement marketing plan* - Not started.